

# User Manual

## Waterproof Weighing Scale

# YSW-5E



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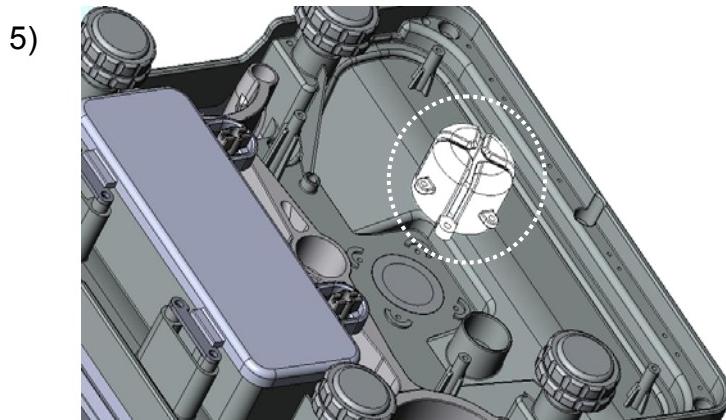
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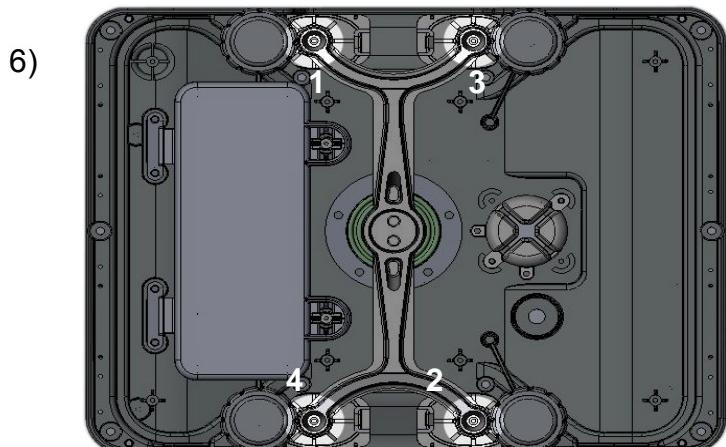
Thank for your purchasing of our EXCELL Weighing Scale. To guide you to use our product correctly, please read this Manual carefully to extend the life of machine and to avoid error.

## Instruction for Use

- 1) Please keep the scale in a cool dry place. Do not store it at high temperature.
- 2) Avoid objects impacting with the scale. Do not drop loads onto the scale or subject the weigh pan to any strong shock loads.
- 3) The load placed on the weigh pan must not exceed the maximum weighing capacity of the scale.
- 4) If the scale is not going to be used for some time, please clean it and store it in a plastic bag in dry conditions. A desiccant sachet may be included to prevent any moisture build up.



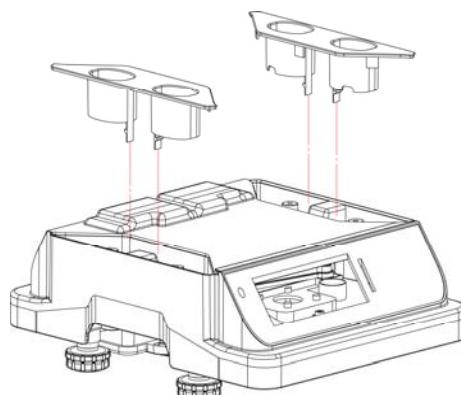
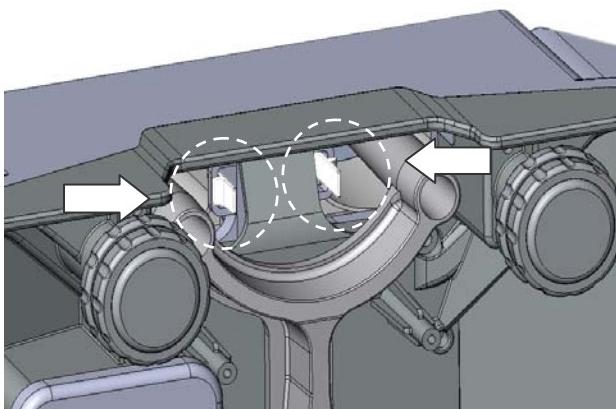
Please do not use your hand and sharp things to touch the waterproof film, in order to protect the scale.



If you want, you can use the four screws to lock the platter so that it will be more firm. When you lock ,please follow the order “1→2→3→4”



7)



Please push the clip to take off the dust cover to clean

## Preparing to Use the Scale

1. Adjust the four levelling feet (if fitted) to set the scale pan level using the spirit level bubble located at the front of the scale.
2. Avoid operating the scale in direct sunlight or drafts of any kind.
3. If possible avoid connecting the scale to ac power outlet sockets which are adjacent to other appliances to minimise the possibility of interference affecting the performance of the scale.
4. Remove any weight that might be on the weigh pan before the scale is switched on and avoid leaving weight on the pan for long periods of time.
5. All goods weighed should be placed in the centre of the weigh pan for accurate weighing. The overall dimensions of the goods being weighed should not exceed the dimension of the weigh pan.
6. We suggest to warm up the scale for 15~20 minutes before operation to ensure best accuracy.
7. Please note when the symbol keeps flashing on the screen, the batteries need to be replaced.
8. Introduction of Storage Battery



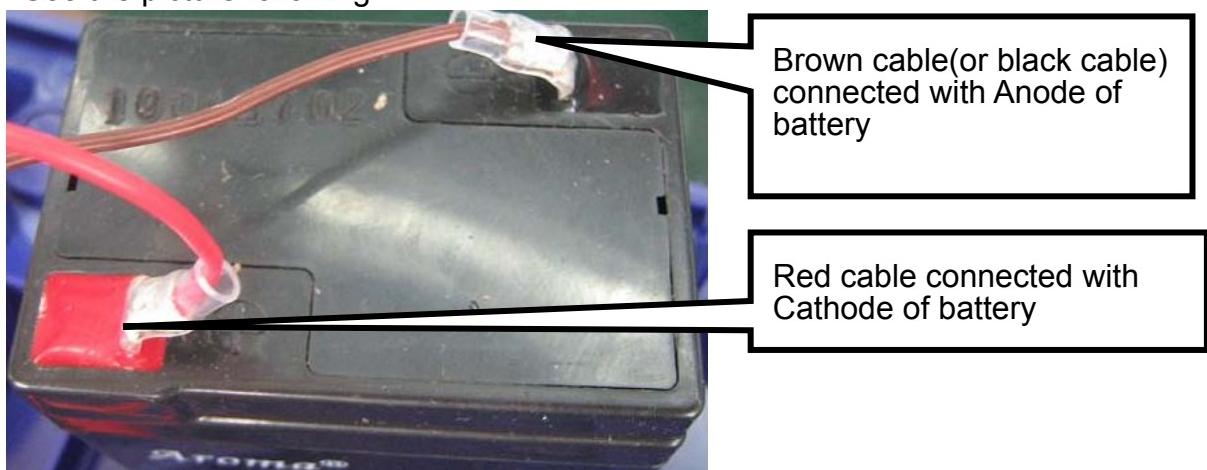
Due to the storage battery adopt the advanced free-maintaining technique, customers need not to replenish electrolyte.

The scale should be recharged every 3 months to prevent failure of the internal rechargeable battery.

1. The battery should be charged for 8~10 hours.
2. The temperature of battery should below 45°C.

## **Maintaining**

1. Please do not discharge with over-current when using the battery. Please charge the battery after discharging current.
2. Please take down the battery when the scale is not used for a long time or break the connection of cathode.
3. Do not short the battery terminals to check whether there is current. Please check whether the connection point is firm to guarantee good connection.
4. The battery should be replaced by specialized person. **No reverse-battery or the product will be damaged.**
  - a) Anode of battery should be connected with Anode of product battery (usually red cable)
  - b) Cathode of battery should be connected with Cathode of product battery (usually brown cable or black cable)
  - c) See the picture following



## **Safety warnings**

1. The electrolyte of battery is caustic which causes metal, cotton, etc to corrode.
2. The hydrogen will be resolved when using or charging the battery and it will cause explosion when approaches fire.



No burning



Caution Corrosion



Warning explosion



Children faraway



# Chapter 1 Introduction

## 1-1 Features and Specifications

### Features

- ◆ Sealed waterproof silica gel strip blocks water from infiltrating into the scale.
- ◆ Surrounded by waterproof grade sheeting to ensure the water free.
- ◆ 1/3,000~1/6,000 display resolution available.
- ◆ Aluminum frames coated with anti-corrosion treatment for longer lifespan.
- ◆ LED or LCD display model available.
- ◆ Stainless steel made feet and platter for anti-rust.
- ◆ High speed of 24bits AD fast reacts and shortens the weighing operation duration.
- ◆ Selectable units: Kilogram (kg), gram (g), ounce (oz), and pound (lb) weighing units available.
- ◆ Built-in rechargeable battery can be easily replaced.
- ◆ Vertical placement design battery prevents from electrolyte leakage, and makes more safety and durable.
- ◆ Low power indication and auto power off.
- ◆ Well-designed protection point for transportation.
- ◆ Securable platter with screws at users' needs.
- ◆ Options: Double-sided display.

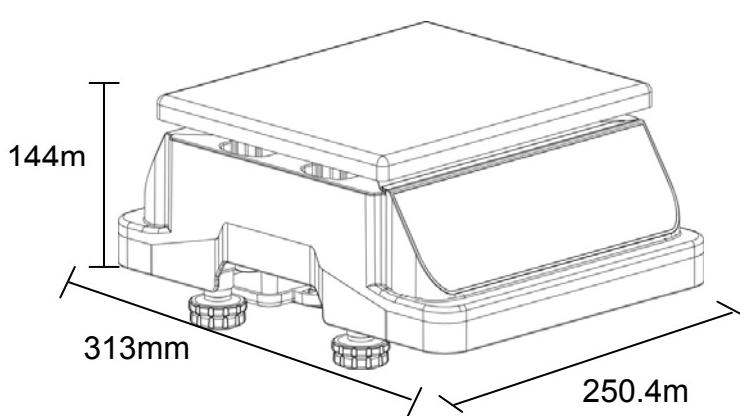
### Specifications

Model	Capacity	Division	Resolution
YSW-3	3kg	0.5g	1/6000
		1g	1/3,000
YSW-6	6kg	1g	1/6000
		2g	1/3,000
YSW-15	15kg	2g	1/7500
		5g	1/3,000
YSW-30	30Kg	5g	1/6000
		10g	1/3,000

**Operating Temperature:** 0°C ~ 40°C (32°F ~ 104°F)

**Dimensions:** 250.4 x 144 x 313 mm ( W x H x D )

**Weight of the scale:** Around 3kg





## 1-2 Power Supply

### Power Supply Selection

1. 6V / 4Ah、6V / 7Ah storage battery
2. AC 110V~240V ( $\pm 10\%$ ) adapter

### Power Consumption

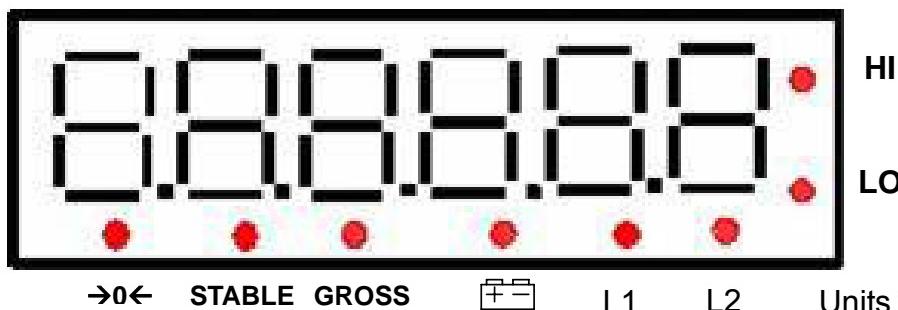
- 25 mA (system + L/C + front display ; power saving mode)  
35 mA (system + L/C + front and back display ; power saving mode)  
55 mA (system + L/C + front display)  
70 mA (system + L/C + double display)

### Low Battery Warning

Please note when the (+ -) symbol keeps flashing on the display, the batteries should be changed.

- The scale will turn off automatically after 1~2 hours, when the low battery warning symbol shows up. The scale must be fully charged, before operating again.
- Low battery shift voltage  $\approx 5.3V$  DC

## 1-3 Display and Keypad Introduction



Units indication		
L1	L2	Units
○	●	kg
○	○	g
●	○	lb / viss

### Icon Introduction

- 0← : Zero point indication  
STABLE : stable indication  
GROSS : gross weight indication

(+) : Low battery indication. When this symbol is flashing replace the batteries.

L1,L2 : Units indication

HI : The weight on weigh pan is greater than the high limit

LO : The weight on weigh pan is lower than the check value

## Keyboard Function

**OFF:** power off

**ON/ZERO:** This key possesses two functions: Power On and Zero function.

- ① When the scale is off, press the **ON/ZERO** key, the scale will switch on.
- ② When the scale is on, the **ON/ZERO** key has zero function.



- When the weigh pan is empty (free of load) and the display is not showing zero, press the **ON/ZERO** key to zero the scale. At zero, the “ $\rightarrow 0 \leftarrow$ ” indication is on.

#### **UNITS:** switching units

Press the **UNITS** key to switch weight units, the icons or arrows will indicate the active units as appropriate. The units available are dependent on the exact scale model.

- After power off, the scale will memorize the active units. When the scale is powered on again, it displays the previously active units.

#### **TARE:** tare / pre-tare key

The tare function will not operate during the following conditions:

When the scale powers on, the weight is still below zero after a container is placed on the weigh pan. Or the tare value is over the full scale capacity.

#### Tare function

- (1) Put a container on the weigh pan and after the weight is stable, press the **TARE** key to zero the weight of the container. The screen displays the “ $\rightarrow 0 \leftarrow$ ” “STABLE” icon.
  - (2) Put the goods in the container, the screen displays the net weight value of the goods.
  - (3) Remove the full container; the screen displays the negative weight value of the container. At this time pressing the **TARE** key again will cancel the tare and the scale reverts back to zero. The screen displays the “ $\rightarrow 0 \leftarrow$ ” “STABLE” icon.
- The tare function can be operated continually to the full weighing capacity of the scale.
  - Continual tare operation is adding or removing tare objects on weigh pan and pressing the **TARE** key each time.

#### **NET | GROSS:** switch NET or GROSS key

- NET/GROSS** key is only used in Tare mode.

In the Tare mode, the screen displays the “Net” icon,

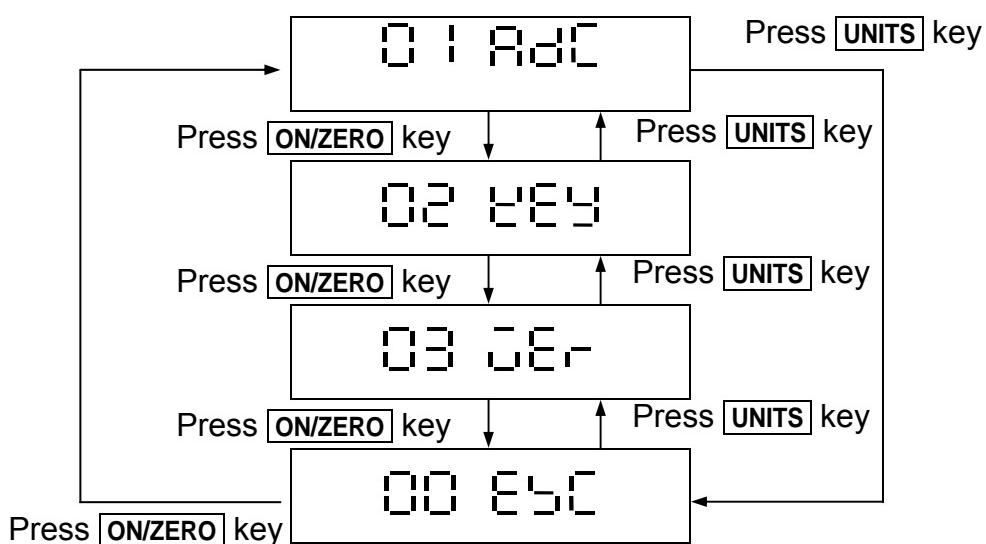
- In tare mode, when the GROSS icon is on, the weight value on the display is the total amount of the tare value. When the GROSS icon is off, the weight value on the display is the net value. press the **NET/GROSS** key to switch between the “Net value” and the “Gross value”.

- At the Gross status, only **OFF** and **NET/GROSS** keys are functional.



## 1-4 Self-Test Mode

- Set the switch SWA1 on the bottom of machine to the LOCK position. When the scale count down, press **[NET/GROSS]** and **[ON/ZERO]** key together, Wait till display shows **01 AdC** to enter “Self-Test Mode”.



### 01 AdC INTERNAL VALUE MODE (must hook up Load Cell to test)

- ① Press **[TARE]** to enter, and the display shows internal value
- ② Please check whether the internal value has changed obviously with weight changing.
- ③ Please check the backlight.
- ④ Press **[ON/ZERO]** key to back to the last screen , the display shows **01 AdC**

### 02 KEY KEYPAD TEST MODE

- ① Press **[TARE]** to enter, display shows **KEY 07**  
Keypad's internal code: **[TARE]** key= 07 、 **[UNITS]** key= 06 、 **[NET/GROSS]** key=05
- ② Press **[ON/ZERO]** key to back to the last screen , the display shows **02 KEY**

### 03 FER FIRMWARE VERSION DISPLAY MODE

- ① Press **[TARE]** to enter, display shows the firmware version **02005**,
- ② Press **[TARE]** key again, the display shows maintenance number **324** for 2 secs
- ③ Press **[ON/ZERO]** key to back to the last screen, display shows **03 FER**

### 00 ESC BACK TO THE LAST SCREEN

Press **[TARE]** key to exit self-test mode, the scale will restart automatically.



## 1-5 Error Messages

- E0** ⇒ Unable to read the EEPROM  
The EEPROM is not mounted yet, or the circuit near EEPROM is broken.
- E1** ⇒ (approval models)  
Initial zero is higher than the zero range when switching the scale on.
- E2** ⇒ (approval models)  
Initial zero is lower than the zero range when switching the scale on.
- E5** ⇒ Internal value is below Zero.
- E9** ⇒ A/D IC malfunction (cannot read A/D value). The load cell may not be connected to the scale correctly.
- OL** ⇒ The weight of the object is over 9 divisions of the maximum capacity.
- OF** ⇒ A/D IC value is over the maximum range.
- **OL** ⇒ Weight is lower than -1/6 full scale.

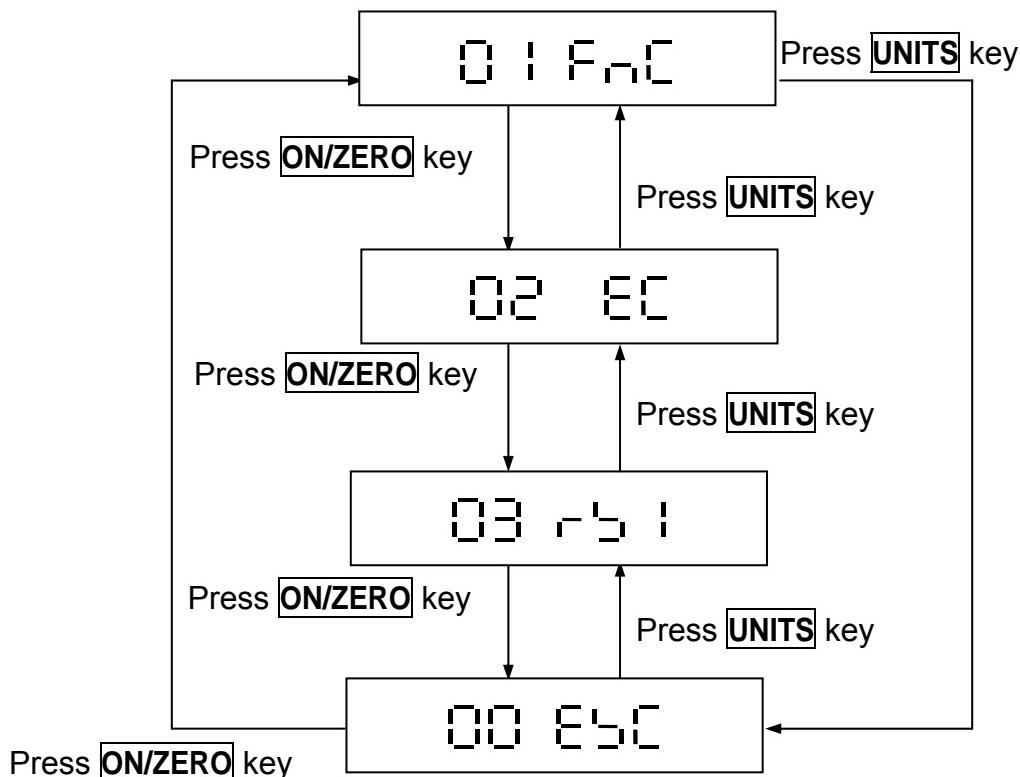
## 1-6 Weight Unit

(kg)	1 g = 0.001 kg
(g)	1 g = 1 g
(lb)	1 g = 0.002204623 lb
(lb/oz)	1 g = 0.03527396 oz
(oz)	1 g = 0.03527396 oz
(GN)	1 g = 15.432358 GN
(viss)	1 g = 0.000612viss
(ct)	1 g = 5 ct



## Chapter 2 External Function Setting

■ In the weighing mode, press the **NET/GROSS** and **ON/ZERO** keys at the same time to enter the External Function setting mode. The LCD shows **01 FnC**.



**01 FnC** ⇒ General Function setting mode

**02 EC** ⇒ External Weight Calibration

**03 r51** ⇒ Function Reserved

**00 ESC** ⇒ Exit the Advanced Function setting mode

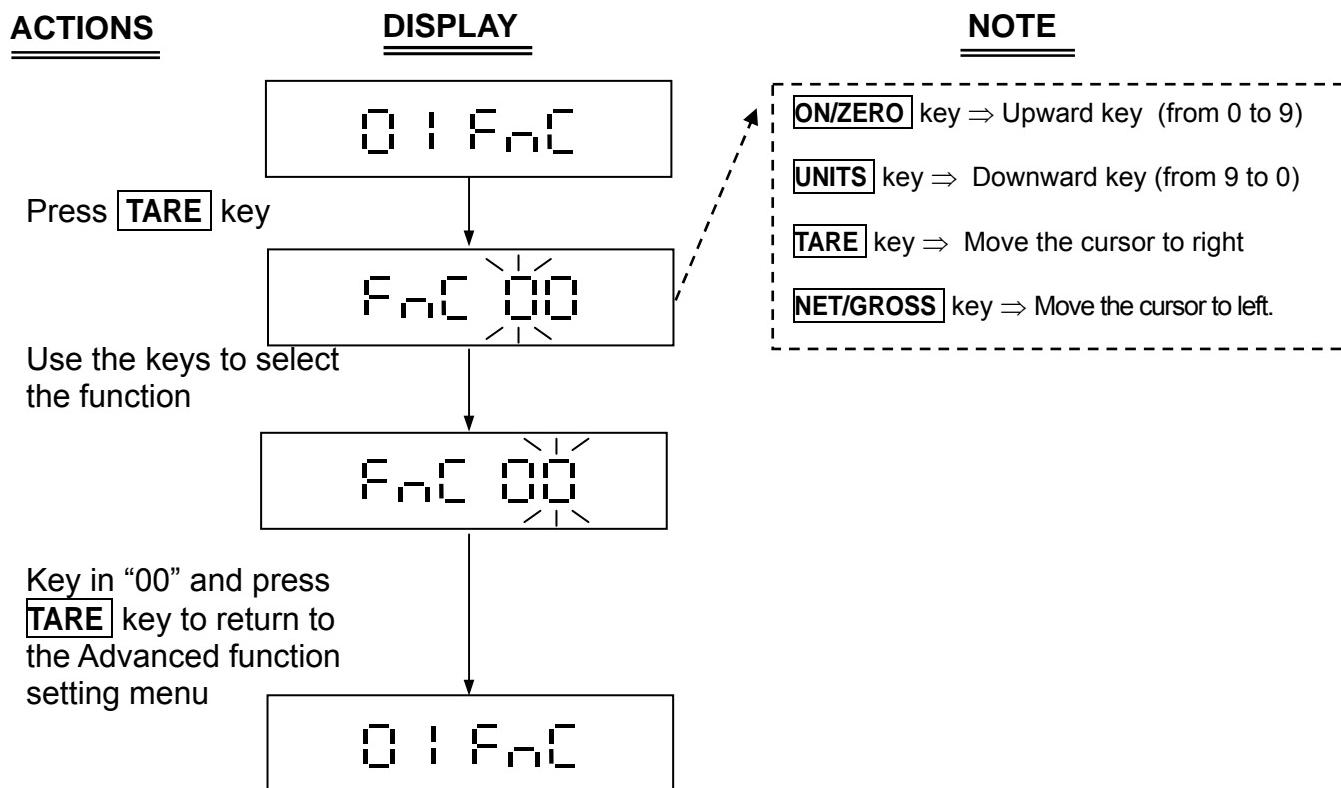
Refer to the following sections for the detailed operation procedures of each function setting.



## 2-1 General Function Setting 0 | FnC

There are 7 functions in general function setting mode from FnC 01 to FnC 07.

### Workflow of the General Function setting:



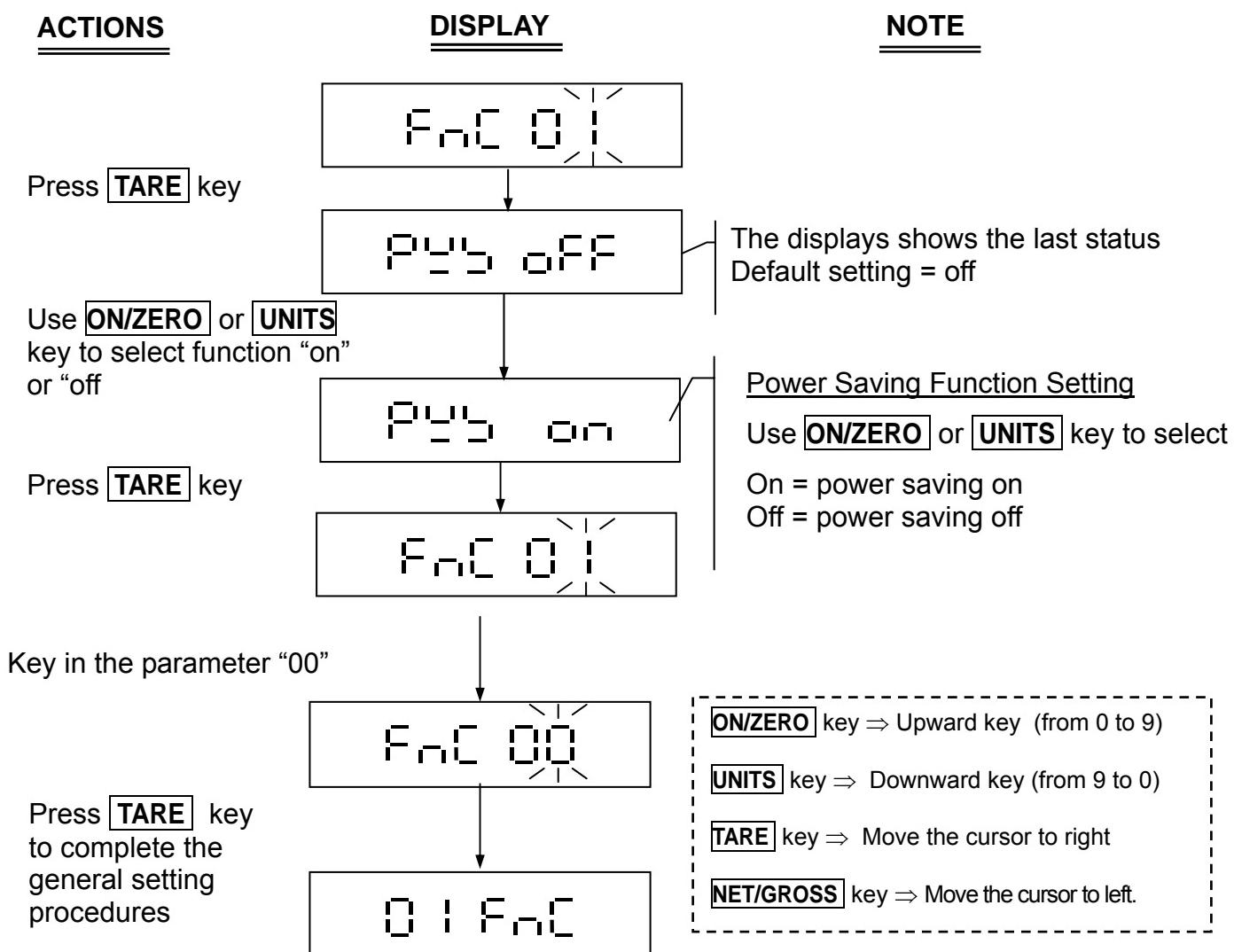
FnC 00	⇒ Return to the Advanced Function Setting Mode Menu
FnC 01	⇒ Power saving Function Settings
FnC 02	⇒ Automatic Power-off Timer Settings
FnC 03	⇒ Hi/Lo/OK Settings
FnC 04	⇒ Restore the Default Settings
FnC 05	⇒ Noise Filter Settings
FnC 06	⇒ Function Reserved
FnC 07	⇒ Function Reserved

Refer to the following sections for detailed operation procedures of each setting.



## 2-1-1 Power Saving Function Setting FnC 01

Select FnC 01 in the General Function setting mode 01 FnC to change power saving function setting.



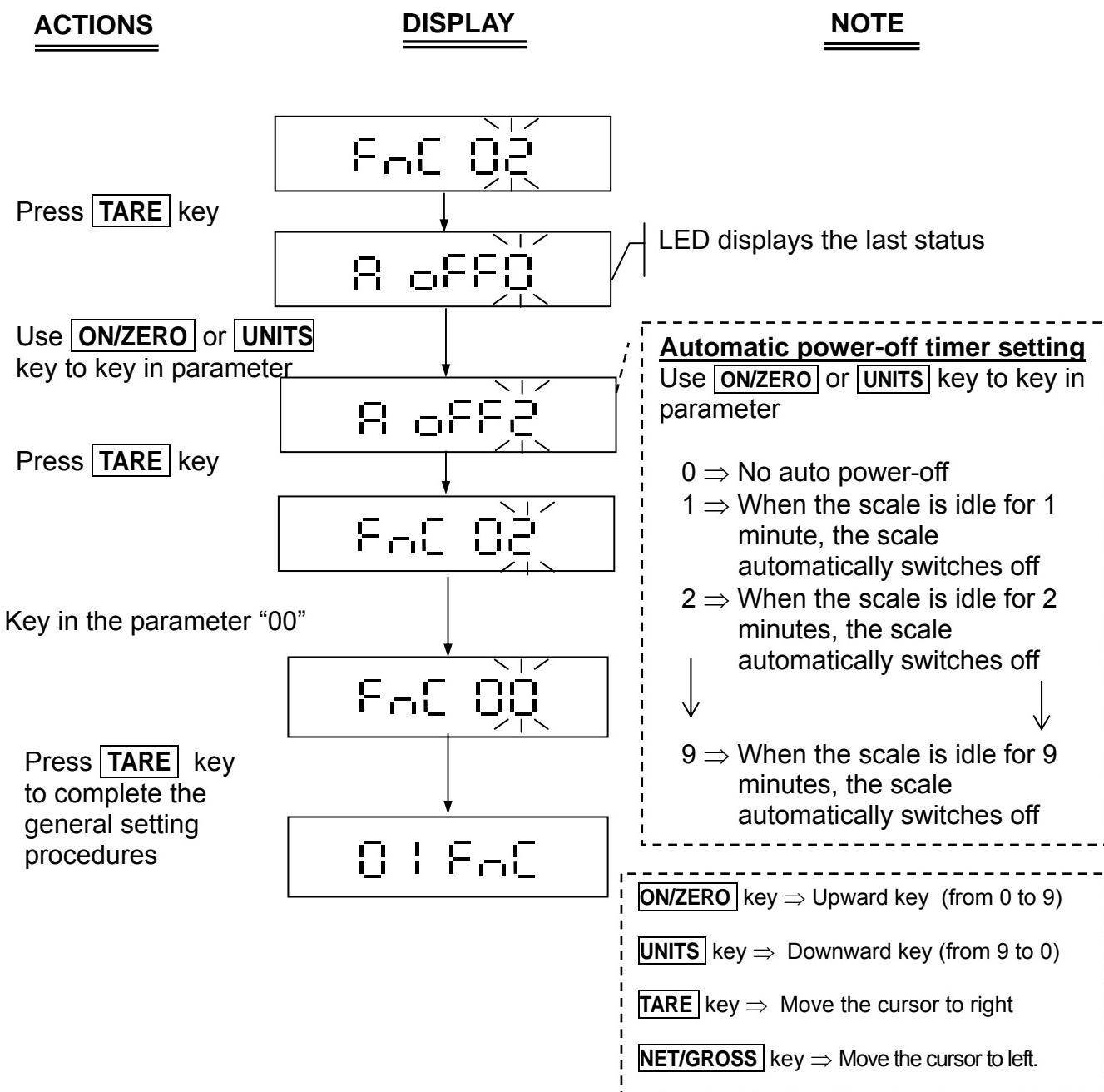
### Power saving function

When the weight is over 10d, the display shows normal. If you press the key, the display still shows normal. When the scale returns to zero or you do not pressing any key, it will enter into power saving mode after 10 seconds.



## 2-1-2 Automatic Power-off Timer Setting FnC 02

Select **FnC 02** in the General Function setting mode **O I FnC** to change the automatic power-off timer setting.



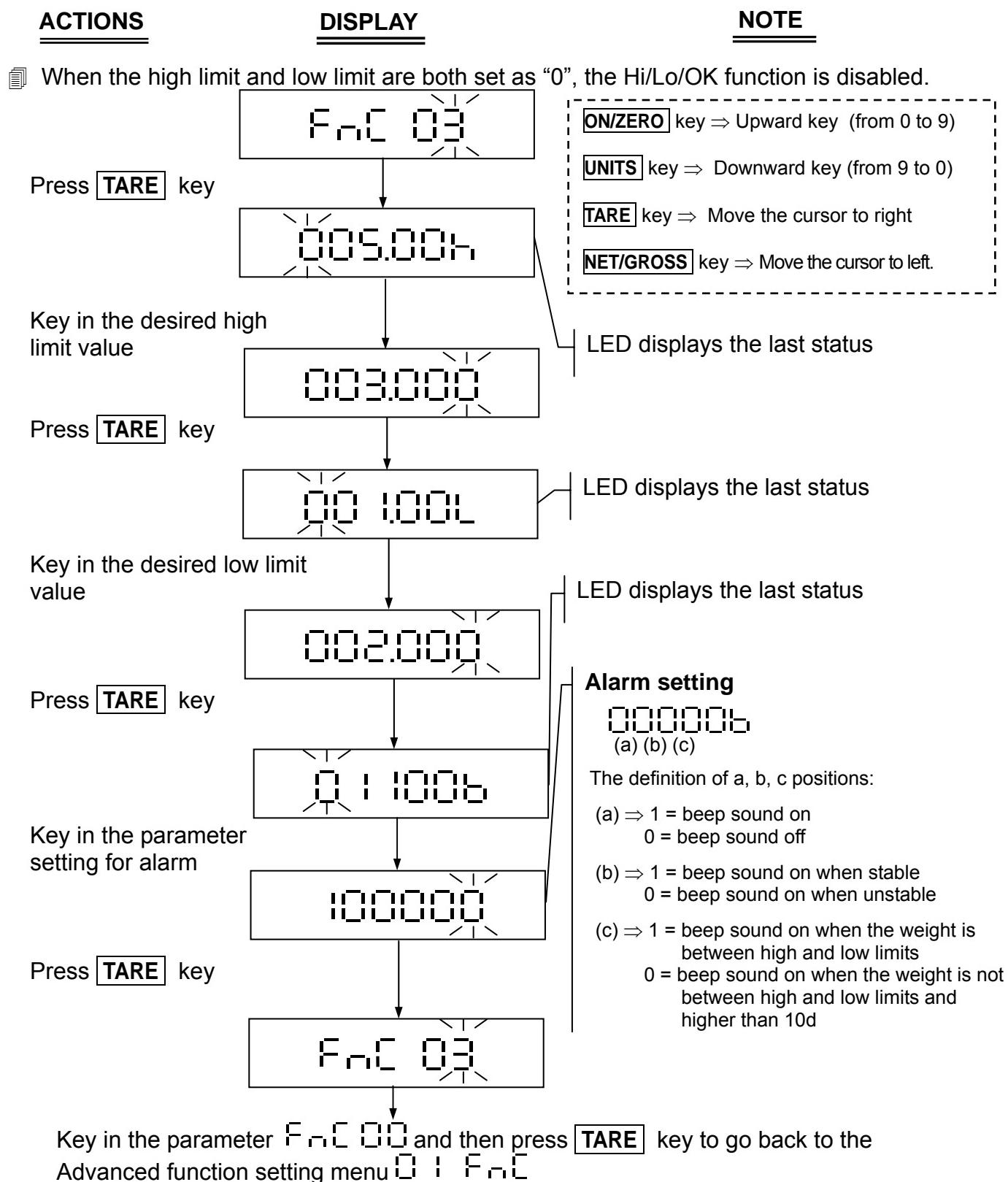
### Automatic power-off function

When the weight on weigh pan is less than 10d or keeps idle for the set time, the scale will automatically switch off.



## 2-1-3 Hi/Lo/OK Function Setting FnC 03

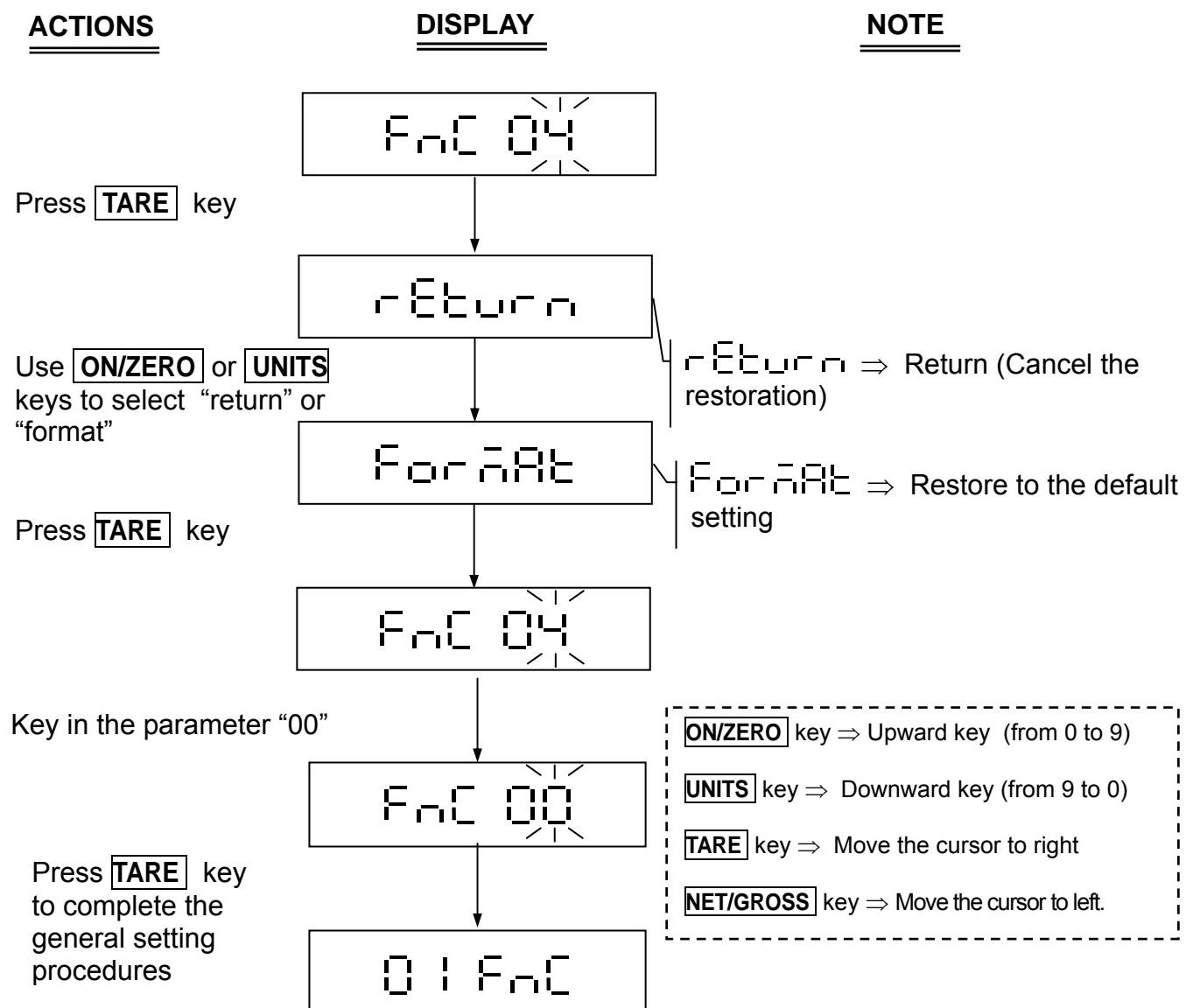
Select **FnC 03** in the General Function setting mode **0** | **FnC** to set the Hi/Lo/OK function. This function is available in all unit modes. In one specific unit mode, enter **FnC 03** to set the Hi/Lo/OK values.





## 2-1-4 Restore to the Default Setting FnC 04

Select FnC 04 in the General Function setting mode 0 I FnC to restore to the default setting.



■ The default setting includes the following:

- 1) External weight calibration
- 2) HI/LO/OK setting value
- 3) Noise filter setting (External)

■ FnC 04 setting is not available for OIML, NTEP and Sri Lanka approved models.



## 2-1-5 Noise Filter Setting FnC 05

Select **FnC 05** in the General Function setting mode  $\square \square \square \square \square$  to set the noise filter setting.

<u>ACTIONS</u>	<u>DISPLAY</u>	<u>NOTE</u>
Press <b>TARE</b> key		<b>Returning to zero point setting</b> LED displays the last status
Use <b>ON/ZERO</b> or <b>UNITS</b> key to key in the parameters		<b>Returning to the zero point setting</b> Use <b>ON/ZERO</b> or <b>UNITS</b> key to key in the parameters or zero point Default setting = 0
Press <b>TARE</b> key		<b>Digital switch &amp; Stabilization range setting</b> When the weight on the scale is over 1/3 full capacity, the function is on.
Use <b>ON/ZERO</b> or <b>UNITS</b> key to key in the parameters		<b>Digital switch &amp; Stabilization range setting</b> LED displays the last parameter setting
Press <b>TARE</b> key		<b>Digital switch &amp; Stabilization range setting</b> Use <b>ON/ZERO</b> or <b>UNITS</b> keys to key in the parameters. Default setting = 0 Parameter 0 ~ 9, the larger the number the more stable the weight.
Use <b>ON/ZERO</b> or <b>UNITS</b> key to key in the parameters		<b>Filter parameter setting</b> LED displays the last parameter setting
Press <b>TARE</b> key		<b>Filter parameter setting</b> Use <b>ON/ZERO</b> or <b>UNITS</b> keys to key in the parameters. Default setting = 5 Parameter 0 ~ 9, the larger the number, the faster the filter response. Fast response can lead to weight instability.

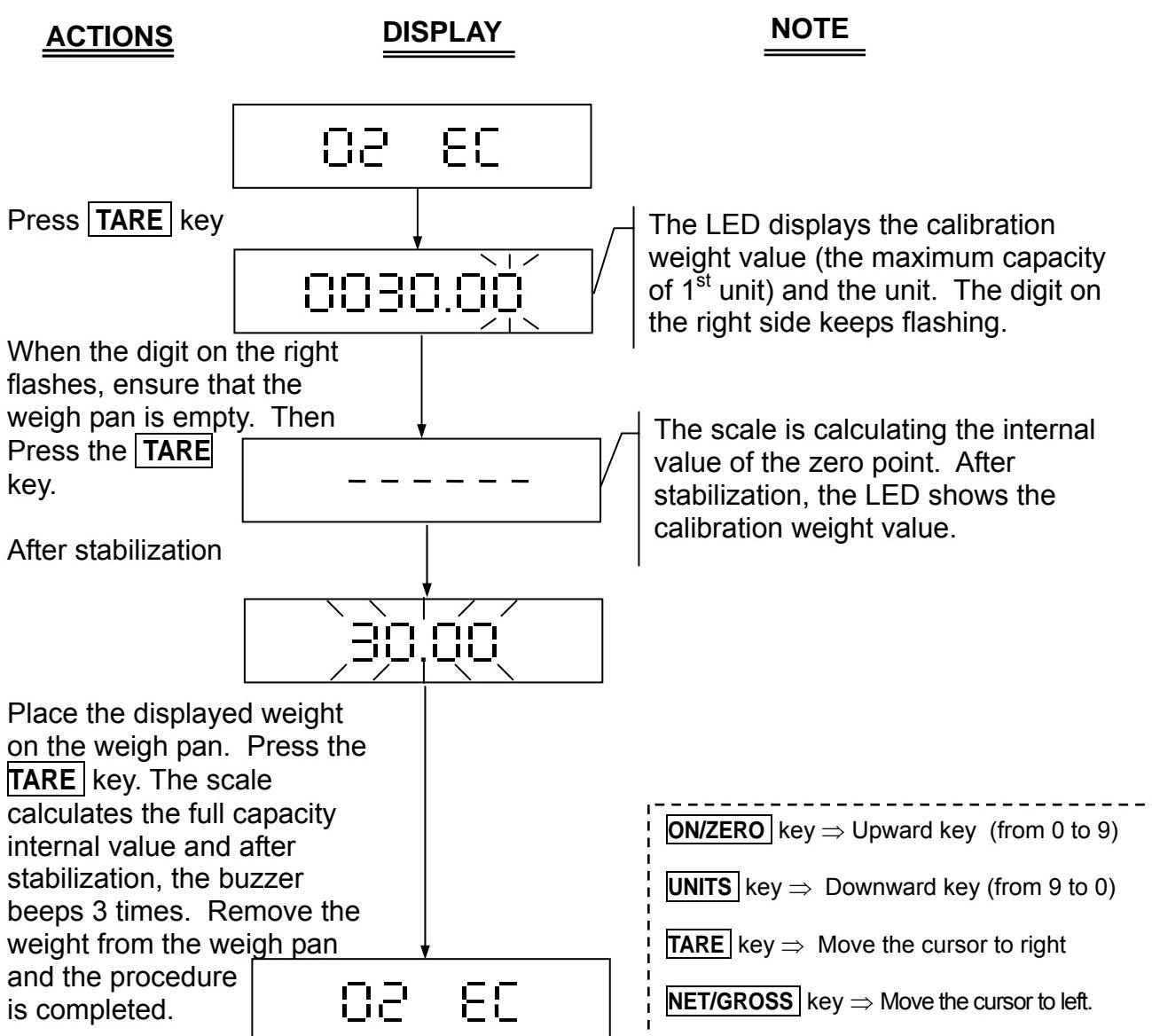
Key in the parameter **FnC 00** and then press **TARE** key to go back to the Advanced function setting menu  $\square \square \square \square \square$

**FnC 05** setting is not available for OIML, NTEP and Sri Lanka approved models.



## 2-2 Weight Calibration 02 EC

In the weighing mode, press the **NET/GROSS** and **ON/ZERO** keys at the same time to enter the External Function setting mode. The LED shows **01 FnC** and uses the **NET/GROSS** or **UNITS** key to select **02 EC** to enter the weight calibration mode.



For approved models, **02 EC** is disabled.

Weight calibration conditions:

The calibration weight value placed on the weight pan must be over e100, and the standard deviation of the weight must be within 10%.



# Appendix1 7-Segment Display Characters

Digit	7-segments letter	Alphabet	7-segments letter	Alphabet	7-segments letter
0		A		N	
1		B		O	
2		C		P	
3		D		Q	
4		E		R	
5		F		S	
6		G		T	
7		H		U	
8		I		V	
9		J		W	
		K		X	
		L		Y	
		M		Z	